

From glowbugs@theporch.com Fri Nov 22 11:05:17 1996
Return-Path: <glowbugs@theporch.com>
Received: from uro (localhost.theporch.com [127.0.0.1])
by uro.theporch.com (8.8.3/AUX-3.1.1)
with SMTP id KAA05645;
Fri, 22 Nov 1996 10:56:53 -0600 (CST)
Date: Fri, 22 Nov 1996 10:56:53 -0600 (CST)
Posted-Date: Fri, 22 Nov 1996 10:56:53 -0600 (CST)
Received-Date: Fri, 22 Nov 1996 10:56:53 -0600 (CST)
Message-Id: <199611221656.KAA05645@uro.theporch.com>
Errors-To: conard@tntech.campus.mci.net
Reply-To: glowbugs@theporch.com
Originator: glowbugs@theporch.com
Sender: glowbugs@theporch.com
Precedence: bulk
From: glowbugs@theporch.com
To: Multiple recipients of list <glowbugs@theporch.com>
Subject: GLOWBUGS digest 360
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas
X-Comment: Please send list server requests to listproc@theporch.com
Status: 0

GLOWBUGS Digest 360

Topics covered in this issue include:

- 1)
by jkh@lexis-nexis.com (John Heck)
- 2) Re: regen designs --- use of an rf stage
by rdkeys@csemail.cropsci.ncsu.edu
- 3) Re: regen sets with/without rf stages (cont.)
by rdkeys@csemail.cropsci.ncsu.edu
- 4) Re: DX-100 manual
by "Thomas J. Whalen" <whalen@swcp.com>
- 5) A lathe of your own
by jeffd@coriolis.com (Jeff Duntemann)
- 6) Handbooks please?
by Glenn Finerman <GFINDER@nms.com>
- 7) Re: Handbooks please?
by jeffd@coriolis.com (Jeff Duntemann)
- 8) "How to Make a Short Wave Receiver"
by jlevro@shore.net (John Levreault)
- 9) Re: regen designs
by kellymed@tmxbris.mhs.oz.au (Murray Kelly)
- 10) Re: "How to Make a Short Wave Receiver"
by jkh@lexis-nexis.com (John Heck)
- 11) 80 Meter Transceiver
by pelt@vt.edu (Randy Pelt)

12) Duelling Hartleys it were on the BA/GB QRG
by rdkeys@csemail.cropsci.ncsu.edu

Date: Thu, 21 Nov 96 12:08:07 EST
From: jkh@lexis-nexis.com (John Heck)
To: glowbugs@theporch.com
Message-ID: <9611211708.AA16893@beans.lexis-nexis.com>

Folks,

I have been accumulating parts for the 2 tube regen plan listed in the 1946 ARRL handbook. I made my own chassis and front panel from a garage sale "liberated" road sign(hard as h*xl to bend with no brake!) and was happy as a pig in s*xt until

Forrest Snyder kindly sent me a copy of an article from the September 1992 QST. "A 40-Meter Regenerative Receiver You Can Build", by David Newkirk, suggested strongly

that any regen should have an RF stage ahead of the detector for several reasons. Among them were the ability to throttle down the signal from strong stations to im-

prove selectivity, help to eliminate the effects of hand capacitance, eliminate dead

spots by isolating the detector from the antenna, and greatly reducing self radiation.

These seemed to me to be important considerations. They seemed to add a lot of value

for really little extra cost or work. Alas, my chosen design does not include an RF

stage. I would appreciate some discussion concerning Mr. Newkirks points on this sub-

ject. Does an RF stage really buy you that much benefit? Can an RF stage be easily added to about any design without a major rework? or is it better to build from a design which included an RF stage from the get-go?

Mr. Newkirk claims that his design is falls in line with the regen design philosophy

exemplified in G. Grammer's QST article of 1933, "Rationalizing the Autodyne", adher-

ance to which, he claims, produces the "Cadillac" of regen designs. His design follows

Grammer, he says, except that Newkirk adds an additional stage of audio. He uses a 6GH8A for RF Amp/Detector and a 6GH8A for Audio1/Audio2, and the radio is fixed band

at 40 meters.

I'm not yet sure I'm going to build this design as I want a general coverage radio,

but his points are well taken and *seem* to be soundly thought out, with a lot of historical precedence. In addition, I've never yet read a regen building article which gave so much operational theory and so many operating instructions. It's a must read for anybody building or operating a regen(unless you read the Grammer article when that issue just came out ;^). I'll send anybody a copy who sends me a business size SASE. Don't bother Forrest, since I'm the one who drew attention to the piece. This would sure be a good one for the plans databank.

Regards,
John Heck, KC8ETS
1009 Donson Drive
Dayton, Ohio 45429
(513)865-7036(work)
jkh@lexis-nexis.com

Date: Thu, 21 Nov 1996 14:04:46 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
To: jkh@lexis-nexis.com
Cc: rdkeys@csemail.cropsci.ncsu.edu (), glowbugs@theporch.com
Subject: Re: regen designs --- use of an rf stage
Message-ID: <9611211904.AA103360@csemail.cropsci.ncsu.edu>

The main point to garner from Newkirk's article (as well as Grammer's), is that the addition of an RF stage ISOLATES the regen detector from the antenna. The main reason for doing that is to keep the OO's happy by reducing antenna radiation. In a properly designed regen set, it has little effect on selectivity. Also, any shielding helps to reduce stray pickup of loud local AM signals, etc. Combine shielding and the rf stage, and you have a much less tempermental regen detector, relatively speaking, although in my hands, the unshielded non-isolated classic 2 or 3 tuber works very well, if properly designed, and the rf output of the thing on low voltages (approximately 48 or less) is only a milliwatt or two. Now, to some qrp folks that will get you quite a ways, but generally, that can't be heard more than a few miles. My neighbor, 300 yards up the road can hear mine, but my other neighbor a mile away, usually can't hear it at all.

The most important things that I have found in regens are:

1. Keep the coupling LOOSE for maximum selectivity. The antenna coupling should be loose AND the tube coupling should be loose (use a highvvalue grid leak of 10 meg ohms and a low value grid coupling cap of 10pf, for best results, at HF).
2. Keep the circuit construction as high-Q as possible.

4. Keep the parts well mounted to prevent vibration effects.
5. Keep the parts well behind the front panel or use shielding on the front panel or both, and ground the tuning dial if used, to minimise hand capacity effects.

This makes any regen sensitive and selective.

If you want to study the finest in regenerative receiver designs, study a) the IP-501A, and b) the RAL. They are the cream of the commercial crop. Hams will have a hard time doing much better than these. Go read Grammer's and Newkirk's articles, though, they are great reading!

73/ZUT DE NA4G/Bob UP

Date: Thu, 21 Nov 1996 15:06:54 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
To: jkh@lexis-nexis.com
Cc: rdkeys@csemail.cropsci.ncsu.edu (), glowbugs@theporch.com
Subject: Re: regen sets with/without rf stages (cont.)
Message-ID: <9611212006.AA103384@csemail.cropsci.ncsu.edu>

> Folks,
> I have been accumulating parts for the 2 tube regen plan listed in the 1946
> ARRL handbook.

Sounds GREAT!

For e-mailing folks, can we keep our lines to under 77 characters, please. It seems to happen most often with folks using windoz based emailers. This is a 77 character line:

123456789012345678901234567890123456789012345678901234567

That way, ascii emailers will not inadvertently fold lines when the beginning > is added to a reply line in an email message, OK? The blame is to those who designed mailers using non-standard fonts, and not to the list. I do suggest that it will make reading mail easier for all.

> Forrest Snyder kindly sent me a copy of an article from the September 1992

> QST. ``A 40-Meter Regenerative Receiver You Can Build", by David Newkirk,
> suggest strongly that any regen should have an RF stage ahead of the
> detector for several reasons. Among them were the ability to throttle
> down the signal from strong stations to improve selectivity,

The RF stage only allows one to throttle down the signal from strong stations, in that it allows you to control the receiver gain. In most regen receivers, the rf gain is used to control the overall receiver gain, and the audio is run wide open, or at least it should be.

The same thing is accomplished in a receiver without an RF stage by uncoupling the antenna to a lesser or greater degree from the input detector tuning coil system. How this is done does not really matter. In the early days, sliding coils or swinging links or some sort of variometer was used. In later days, a variable input coupling capacitor of, for example, 3-30pf was used. I prefer to physically uncouple the coil rather than try to electronically uncouple it. It works better in my hands. The early WWI sets did it right in my estimation. Cheaper later designs forgot how to do it right.

> help to eliminate the effects of hand capacitance,

I will have to differ with folks on this one. The use of an RF stage has absolutely nothing to do with the effect of hand capacitance on a regenerative detector. It DOES have to do with the effect of variations in antenna capacitance (typically from the swinging of the antenna in the wind) altering the tuning of the detector slightly. This occurs mostly when the detector has been overcoupled to the antenna system, and not when it has been properly coupled into the antenna system.

Hand capacity effects are due to the physical proximity of the operator's body parts to the oscillating detector tuned circuit. In the old days, the solution was to physically move the parts back from the front panel by some 6 to 12 inches and use long shafts on the tuning controls. Hams typically did this in the early and middle 1920's. As early as 1911, commercial spark sets used a thin sheet of copper behind the panel to reduce hand capacity effects. This was often used by hams in the middle and late 1920's and early 1930's. This works fine, as long as the sheet is grounded and the dial mechanism, if used is grounded. By 1930, some hams were using complete metallic shielding on their regen sets, and this was becoming general practice by 1935. After 1935, most folks used some form of shielding or a shielded chassis, except on the very lowest-endian regen sets.

> eliminate dead spots by isolating the detector from the antenna,

This is done by the isolation of the detector stage by the RF stage. It is also done on sets without an RF stage by LOOSE COUPLING the detector to the antenna system. Folks, if you never learn anything else about regens and self-excited oscillator transmitters, you MUST learn that best operation is obtained with the loosest practical amount of coupling. A regen detector is extremely sensitive all the way down to the noise floor at HF, especially on the lower bands of 160/80/40, that we are likely to use such regens on. Thus you don't use the antenna as a pickup as much as you use it as a conductor to get the signal into the detector. Overcoupling is the greatest way to kill a good regen detector, bar none.

> and greatly reducing self radiation.

This is the main reason that everyone used and still uses the RF stage on a regenerative detector. It will reduce the autodyne carrier by 10-30 db, coupled with proper shielding.

> These seemed to me to be important considerations. They seemed to add a lot of value

> for really little extra cost or work. Alas, my chosen design does not include an RF

> stage. I would appreciate some discussion concerning Mr. Newkirks points on this sub-

> ject. Does an RF stage really buy you that much benefit?

In comparing regen receivers with and without an RF stage, I find that the RF stage only serves to isolate the detector and give you a volume/sensitivity control on multistage sets. Even on the RAL, the two stages of RF only serve to act as a general passband filter and mostly as a volume control mechanism. The use of the RF stage DOES greatly help to reduce inband overloading. For example, when my buddies up and down the street get on 80M, the unshielded, NON-RF stage set will be swamped, unless I GREATLY uncouple the antenna from the set. When I use the RAL, I can completely root out the interference of W1AW, the traffic handlers who frequent 3580.0, and the traffic handlers on 3578.0, in addition to my neighbors (which will also swamp the wide-open front end in my HW-16). In this case, the selectivity is as a passband due to the two stages of RF ahead of the detector. The detector is already operating at about a 1khz bandwidth or less. The rf stages merely steepen up the passband skirts. That way, 3579.545 is a pleasure to operate on.

> Can an RF stage be easily added to about any design without a major rework?

Quite simply. In the 30's Grammer used an outboard RF stage as a separate box. Some manufacturers touted them as ``preselectors''. The novice regens of the late 40's and early 50's often had an RF stage that could be added outboard to the main set.

Also, if you are building the set from scratch, the addition of an RF stage is trivial. Just copy any good rf stage from any ham receiver or any handbook. They will all work, generically, about the same, on low HF.

> Or, is it better to build from a design which included an RF stage from the
> get-go?

Really makes no difference. Sets designed with the RF stage were usually sets that once did not have an RF stage. So, go figure. That is how the handbooks started off with something simple like the traditional 2-tube, and grew it up to the fancier 3/4/5 tube autodyne sets.

>

> Mr. Newkirk claims that his design falls in line with the regen design philosophy

> exemplified in G. Grammer's QST article of 1933, "Rationalizing the Autodyne", adher-

> ance to which, he claims, produces the "Cadillac" of regen designs. His design follows

> Grammer, he says, except that Newkirk adds an additional stage of audio. He uses a

> 6GH8A for RF Amp/Detector and a 6GH8A for Audio1/Audio2, and the radio is fixed band

> at 40 meters.

Although I have not seen Dave's article in a year or two, I would offer as the caddilac example of regen receiver design, the classic RCA RAL-7 receiver, used by the military from 1937-1965 or so. It is hard to beat under any circumstances for a regen set. It has filtering that is as good as most modern ricenboxes, and better than many. Alas, it has no fancy digital readout, just a 0-1000 logging dial.

Both Grammer's and Newkirk's articles are good reading. Also, you

should consult Sterling's Radio Manual, 1st, 3rd, and 4th editions for very good background and examples in regen sets, and how they developed between 1927 and 1952.

73/ZUT DE NA4G/Bob UP

Date: Thu, 21 Nov 1996 13:14:30 -0700 (MST)
From: "Thomas J. Whalen" <whalen@swcp.com>
To: Multiple recipients of list <glowbugs@theporch.com>
Subject: Re: DX-100 manual
Message-ID: <Pine.SUN.3.91.961121130952.26846A-100000@kitsune.swcp.com>

Hi All, I have been building glowbug rigs for a couple of month now and sure having fun! I was just given a dx-100 and need a manual or a little info on it. I can get it to come on but when I plug in the key I get no output. Is there a t/r connection on the back or what??? Thanks Tom WB5QYT

Date: Thu, 21 Nov 1996 13:26:52 -0700
From: jeffd@coriolis.com (Jeff Duntemann)
To: glowbugs@theporch.com
Subject: A lathe of your own
Message-ID: <1.5.4.32.19961121132216.00f0803c@ntserver.coriolis.com>

Hi gang--

I got a recent sale catalog from Enco and they list an interesting device that people here should know about. It's a real metal-turning bench lathe, 7" swing and 10" between centers. It's quite small, and very cheap: only \$479 new.

I bought a lathe in 1988, and it's been spectacularly useful for homebrewing, largely in winding coils and making small shaft fittings for dials and such. Lathes make it possible to create a perfectly round metal or plastic disk for vernier dials, too.

Their new 96-97 full-line catalog is now available, too. It's one of the best tool catalogs I get regularly. (And I swear I get every catalog in the civilized galaxy...) I've bought lots of stuff from them over the years and never gotten messed-over; the drill press they sold me in 1976 works as good as new--and it's done a *lot*.

Enco Manufacturing
5000 W. Bloomingdale

Chicago IL 60639

1-800-860-3400

--73--

--Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Thu, 21 Nov 1996 15:58:38 -0500
From: Glenn Finerman <GFINER@nms.com>
To: glowbugs@theporch.com
Subject: Handbooks please?
Message-ID: <s2947c52.003@nms.com>

I've completed the first step in the "Glowbugs Cookbook" project by copying all the xmtr and VFO projects from my 1956 handbook. Now I need more material!!....How about it folks? Does anybody have a duplicate 50's handbook they would be willing to part with? I'm not sure all the xmtr projects that appeared in QST made it to the Handbook and visa-versa, so I would also be interested in duplicate QST's from the 50's that contain xmtr and VFO projects. Just a reminder, all those who contribute will receive a free copy of the cookbook when it's done.

Thanks!!.....Glenn N2BJG gfiner@nms.com

Date: Thu, 21 Nov 1996 15:01:32 -0700
From: jeffd@coriolis.com (Jeff Duntemann)
To: GFINER@nms.com
Cc: glowbugs@theporch.com
Subject: Re: Handbooks please?
Message-ID: <1.5.4.32.19961121145656.0096d854@ntserver.coriolis.com>

At 03:00 PM 11/21/96 -0600, you wrote:
>I've completed the first step in the "Glowbugs Cookbook" project by
>copying all the xmtr and VFO projects from my 1956 handbook.
>Now I need more material!!....How about it folks? Does anybody have
>a duplicate 50's handbook they would be willing to part with?

Actually, some of the best (or at least the most duplicatable) tube projects

appeared in ARRL Handbooks of the early 1960s. A lot of parts in common use in the 50's (basically pre-made plug-in coils, odd IF cans, and such) are long gone now, and by the Sixties were less used.

My favorite two years are 1964 and 1965. After that, solid state began to dominate the book.

--73--

--Jeff Duntemann KG7JF
Scottsdale, Arizona

Date: Thu, 21 Nov 1996 19:01:25 -0500 (EST)
From: jlevro@shore.net (John Levreault)
To: glowbugs@theporch.com
Subject: "How to Make a Short Wave Receiver"
Message-ID: <199611220001.TAA10634@relay1.shore.net>

Help!

Can somebody help me identify this? It's a 70-page magazine style publication with the above title. Unfortunately, the covers are missing and nowhere is it otherwise identified.

The only date reference I can find is in the ads in the back where one ad sez 1934. It's a great rag, with all kinds of regen, superhet, and superregen receivers, tips on operation and performance, even a push-pull audio amp with 45's. The first article is entitled "The S.W.C. Two Tube Portable Works Speaker", which includes the design of a folding horn for the loudspeaker.

Any help in identifying this would be appreciated.

73 de NB1I
John Levreault

Date: Fri, 22 Nov 96 19:38:09 AES
From: kellymed@tmxbris.mhs.oz.au (Murray Kelly)
To: glowbugs@theporch.com
Cc: jkh@lexis-nexis.com
Subject: Re: regen designs
Message-ID: <257@tmxbris.mhs.oz.au>

The reference to an RF stage pre-regen detector as an isolator to re-radiation prompted 2 thoughts. (some sort of record?).

Anyway - there is a most thoughtful discussion of regens as general coverage Rx in the RSGB Technical Topics Scrapbook 1985-1989 pp162-163. There is even a circuit using a twin triode and a triode pentode. There is NO RF stage. The writer Alan Radmore RS88565 (the UK has registered listeners still) decided to build himself a regen after the old ways and explains how successful it was. His advantage was the availability of plug-in coils commercially.

One point he made was the effectiveness of an antenna attenuator using a dual gang pot of 10K A. The wipers are paralleled and the anti-clockwise end of the tracks grounded. One top end of one is the antenna input and the other top end goes to the tank. He reports that once set he rarely has to adjust it. Well worth a look if you can get your hands on a copy.

The other thing that came into my mind was - does a toroid tank in a regen Rx radiate less than a solenoid coil? The only connection to the outside world is the short wire antenna. This may overcome some of the objections I have had from OTs when I suggest I want try my hand at a regen Rx using a tube. Evidently transistor regens don't radiate??? That's the impression they try to foist on me.

Comments?

Cheers. Murray

```
*****
*      Murray Kelly vk4aok      mkelly@tmxbris.mhs.oz.au      *
*      29 Molonga Ter. / Graceville/ QLD. 4075/ Australia      *
*      ph/fax Intl+ 61 7 3379 3307  mobile 018 071 355          *
*****
```

Date: Fri, 22 Nov 96 08:38:03 EST
From: jkh@lexis-nexis.com (John Heck)
To: glowbugs@theporch.com, jlevro@shore.net
Subject: Re: "How to Make a Short Wave Receiver"
Message-ID: <9611221338.AA17171@beans.lexis-nexis.com>

John,

This is an issue of the magazine "Short Wave Craft" published in the early-mid thirties. I have several issues. It's a Hugu Gernsback publication.

Regards,
John Heck, KC8ETS
1009 Donson Drive
Dayton, Ohio 45429
(513)865-7036(work)
jkh@lexis-nexis.com

> Help!
>
> Can somebody help me identify this? It's a 70-page magazine style
> publication with the above title. Unfortunately, the covers are missing and
> nowhere is it otherwise identified.
>
> The only date reference I can find is in the ads in the back where one ad
> sez 1934. It's a great rag, with all kinds of regen, superhet, and
> superregen receivers, tips on operation and performance, even a push-pull
> audio amp with 45's. The first article is entitled "The S.W.C. Two Tube
> Portable Works Speaker", which includes the design of a folding horn for the
> loudspeaker.
>
> Any help in identifying this would be appreciated.
>
> 73 de NB1I
> John Levreault
>
>

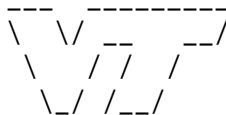
Date: Fri, 22 Nov 1996 09:18:44 +0000
From: pelt@vt.edu (Randy Pelt)
To: glowbugs@theporch.com
Subject: 80 Meter Transceiver
Message-ID: <v01540b02aebb1fc049b6@[198.82.152.40]>

There is a real nifty qrp tube transceiver for 80 Meters in the July 1973
QST. It will put out up to 10 watts. Check it out!

72/3

Ranson J. Pelt
pelt@vt.edu
QST de w4wyt
ex-nz4i

Semper Fi



Date: Fri, 22 Nov 1996 11:07:03 -0500 (EST)
From: rdkeys@csemail.cropsci.ncsu.edu
To: glowbugs@theporch.com, boatanchors@theporch.com
Cc: rdkeys@csemail.cropsci.ncsu.edu ()
Subject: Duelling Hartleys it were on the BA/GB QRG
Message-ID: <9611221607.AA103640@csemail.cropsci.ncsu.edu>

Had great fun duelling the 210 Grandma Hartley at 1 watt output with a 15 watt 211 Hartley of WB2ABQ(?). That 50 watt bottle sounded sweeter'n apple pie. Alas, we had a fair wind/rain storm with tons of QRN here last night, and the antenna was swinging highly in the wind. Thus ol' Grandma Hartley was a 'wobblin' on 3579.545 +- 500hz, or so, as the antenna swung back and forth. Oh, well, at least it sounded like a real Hartley then..... The wx man sez the whole of North America will be pretty cool tonight and the weekend, so methinks the band will be up again. Someone mentioned there was some sort of CW contest on, but that should probably not affect the BA/GB QRG. Perhaps it will be another fine weekend for the BA/GB folks and we will get a bunch o' grand ol' ether burners on watch aboard the ol' crackle an' din o' 80M tonight and Sat. nite. Last night Conard's fine 6Y6 puffer was doing a grand job and K3KC's(?) husky Viking II was knockin' de ol' tin cans off me noggin. So, as some crusty ol' feller once said..... ``grapples ye up yer tin cans atop yer noggins, fires ye up yer fine glowbottles, an' readys ye yer keys at the fore... it be a fine BA/GB nite on watch, tonight!''

See ya there!

73/ZUT DE NA4G/Bob UP

End of GLOWBUGS Digest 360
